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#### SUPPLEMENTARY INFORMATION:

##### Comments Invited

The FAA has determined that notice and opportunity for public comment in accordance with 14 CFR 11.38 are unnecessary, because the FAA has provided previous opportunities to comment on substantially identical special conditions and has fully considered and addressed all the substantive comments received. Based on a review of the comment history and the comment resolution, the FAA is satisfied that new comments are unlikely. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

However, the FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late, if it is possible to do so without incurring expense or delay. We may change these special conditions, based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on these special conditions, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

##### Background

On September 12, 2002, Electronic Cable Specialists applied for a supplemental type certificate (STC) to modify McDonnell Douglas Model DC-9-81, -82, -83, and -87 airplanes. These airplanes are currently approved under Type Certificate A6WE. The modification installs electronic flight

displays in the cockpit. The existing Captain's and First Officer's electro-mechanical attitude indicators (ADIs) and horizontal situation indicators (HSIs) will be replaced by flat panel displays with associated cockpit display controllers. These avionics/electronics and electrical systems may be vulnerable to high intensity radiated fields (HIRF) external to the airplane.

##### Type Certification Basis

Under the provisions of 14 CFR 21.101, Amendment 21-69, effective September 16, 1991, Electronic Cable Specialists must show that McDonnell Douglas Model DC-9-81, -82, -83, and -87 airplanes, as modified, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate A6WE or the applicable regulations in effect on the date of application for the change. Subsequent changes have been made to § 21.101 as part of Amendment 21-77, but those changes do not become effective until June 10, 2003.

The regulations incorporated by reference in the type certificate are commonly referred to as the "original type certification basis." The certification basis for the McDonnell Douglas Model DC-9-81, -82, -83, and -87 airplanes includes 14 CFR part 25, effective February 1, 1965, as amended by amendments 25-1 through 25-40, except for special conditions and exceptions noted in Type Certificate A6WE.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for the McDonnell Douglas Model DC-9-81, -82, -83, and -87 airplanes modified by Electronic Cable Specialists because of novel or unusual design features, special conditions are prescribed under the provisions of § 21.16.

Special conditions, as defined in § 11.19, are issued in accordance with § 11.38 and become part of the type certification basis in accordance with § 21.101(b)(2), Amendment 21-69, effective September 16, 1991.

Special conditions are initially applicable to the model for which they are issued. Should Electronic Cable Specialists apply later for a supplemental type certificate to modify any other model included on Type Certificate A6WE to incorporate the same novel or unusual design features, these special conditions would also apply to the other model under the provisions of § 21.101(a)(1), Amendment 21-69, effective September 16, 1991.

##### Novel or Unusual Design Features

The McDonnell Douglas Model DC-9-81, -81, -83, and -87 airplanes modified by Electronic Cable Specialists will incorporate new electronic flight displays that perform critical functions. This system may be vulnerable to high-intensity radiated fields (HIRF) external to the airplane. The current airworthiness standards of part 25 do not contain adequate or appropriate safety standards for the protection of this equipment from the adverse effects of HIRF. Accordingly, these systems are considered to be novel or unusual design features.

##### Discussion

There is no specific regulation that addresses protection requirements for electrical and electronic systems from HIRF. Increased power levels from ground-based radio transmitters and the growing use of sensitive electrical and electronic systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the McDonnell Douglas Model DC-9-81, -82, -83, and -87 airplanes modified by Electronic Cable Specialists. These special conditions require that new avionics/ electronic and electrical systems that perform critical functions be designed and installed to preclude component damage and interruption of function due to both the direct and indirect effects of HIRF.

##### High-Intensity Radiated Fields (HIRF)

With the trend toward increased power levels from ground-based transmitters and the advent of space and satellite communications, coupled with electronic command and control of airplanes, the immunity of critical avionic/ electronic and electrical systems to HIRF must be established.

It is not possible to precisely define the HIRF to which the airplanes will be exposed in service. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF. Furthermore, coupling of electromagnetic energy to cockpit-installed equipment through the cockpit window apertures is undefined. Based on surveys and analysis of existing HIRF emitters, an adequate level of protection exists when compliance with the HIRF protection special condition is shown in accordance with either paragraph 1 OR 2 below: